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ABSTRACT

This paper inquires analytically about the connotative meaning of the terms poverty and learning as they function in the language of comparative education research. In the analysis of concepts, the analytical techniques used are the techniques of definition, explication, illustration, and substitution. Four conceptions of the term learning and five conceptions of the term poverty are discussed. When these conceptions (or definitions) are substituted into statements it was found that malfunctions in language occur. Such a language malfunction is an ambiguity in meaning in which a single term simultaneously connotes two or more meanings. The problem, then, is a systematic ambiguity in the language of educational researchers. In order to dissolve the problem of ambiguity in their language, comparative education researchers, and researchers in general, must learn to distinguish among analytical, empirical, and valuative inquiry. That is, they must attend to the analyticity of their language and adhere to the rules of inquiry which are necessarily implied by the type of inquiry that is intended by the researchers. (PN)

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'Poverty' and 'Learning': The Function and Malfunction of These Terms in the Language of Comparative Education Research
(A Study in Analytical Educology)

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INTRODUCTION

Methodology

This paper inquires analytically about the connotative meaning of the terms 'poverty' and 'learning' as they function in the language of comparative education research. This paper does not inquire empirically about the phenomena denoted by the terms 'poverty' and 'learning', nor does this paper inquire valuatively about the concepts of 'poverty' and 'learning'. In the analysis of the concepts in this paper, the analytical techniques which are used are the techniques of definition, explication, illustration and substitution.[1]

Problem and Findings

Through analytical inquiry, it is found in this paper that there are several conceptions of the term 'learning' and of the term 'poverty'. When these conceptions (i.e., these definitions) are substituted into statements, it is found that malfunctions in language occur. A malfunction in language is an ambiguity in meaning in which a single term simultaneously connotes two or more meanings. The problem, then, is a systematic ambiguity in the language of educational researchers. The pragmatic results of the problem are that (1) researchers ask and answer questions which they do not intend; (2) researchers often fail to effectively answer the questions which they ask; and (3) researchers confound educational inquiry with social and political inquiry. In general, because of the problem of ambiguity in their language, educational researchers unintentionally, but systematically, confound analytical, empirical and valuative inquiry.

Recommendations

In order to dissolve the problem of ambiguity in their language, educational researchers must learn to distinguish among analytical, empirical and valuative inquiry. That is, they must attend to the analyticity of their language and adhere to the rules of inquiry which are necessarily implied by the type of inquiry

that is intended.

METHODS OF ANALYTICAL INQUIRY

The conception of the term 'education' which this paper uses is 'the process in which someone intentionally teaches and someone intentionally learns something in some setting using some method and style'.[2] The someone doing the intentional teaching is at times teachers, parents, uncles, cousins, peers. The someone doing the intentional learning is at times brothers, sisters, children, adults. The something which is taught and learned is at times history, tennis, mathematics, auto mechanics, fishing, physics. The setting is at times schools, apartments, street corners, factories, business offices, automobiles, hotels, taverns. The method is at times lectures, role playing, assigned readings, questions, writing essays, discussion. The style is sometimes formal, rigid, loose, folksy, supportive, non-supportive.

A distinction can be made between occurrences in education and statements about education. Occurrences in education are phenomena which occur in the process of someone intentionally teaching and someone intentionally learning something. Synonyms for 'occurrences' are 'events', 'happenings', 'phenomena'. Examples of educational occurrences are teachers talking with students, students reading books, report cards being distributed, parents consulting with teachers, knowledge being learned.

Statements about education are declarative sentences which are made about the process of someone intentionally teaching and someone intentionally learning something. When statements about education are verified with the appropriate evidence, the statements are true statements about education. A true statement about education is knowledge about education. Examples of knowledge about education are the verified statements:

1. Many teachers use lecture as a method of teaching.

2. A relatively high correlation exists between the educational achievement of parents and the educational achievement of their children.

3. The student population in sub-Saharan Africa is predominantly male.

Statements about education are verified through the process of inquiry. The process of inquiry is the process in which questions are asked, answers are stated and evidence is presented to verify the stated answers. The product of successful inquiry is knowledge (i.e., verified statements).

Three kinds of inquiry which can be distinguished are analytical, valuative and empirical inquiry. Empirical inquiry about education is the process of verifying empirical statements about education. Empirical statements about education are declarative sentences about education which are verifiable by the principle of observation. The principle of observation is the principle of verification which is used to establish the correspondency relationship between a statement about education and an observable occurrence in education. Examples of empirical statements about education are:

1. One half of all federal legislators in the Republic of Nigeria have ended their formal education between the ages of 19 and 26 years.

2. Peru relies upon foreign universities to train its high-level manpower.

3. London pre-school teachers are inclined to act mainly as managers of their pupil's environment.

When empirical statements about education are verified by successful empirical inquiry, then the statements constitute empirical knowledge about education.

Valuative inquiry[3] about education is the process of verifying valuative statements about education. Valuative statements about education are declarative sentences about education which are verifiable by the principle of valuative and formal reasoning. The principle of valuative and formal reasoning is the principle of verification which is used to establish the coherency and adherency relation-

ships between statements about education and the conceivable evidence of linguistic objects (i.e., concepts and propositions) in educational language and the evidence of acts as objects in education. Examples of valuative statements about education are:

1. Teacher intervention in the play activities of pre-school pupils is good when the intervention is for instructional purposes.
2. The educational system in England is, on the whole, a more effective system than that of the United States.
3. It is good that younger Argentine professors are rather less concerned with occupational security than their older colleagues.

When valuative statements about education are verified by successful valuative inquiry, then the statements constitute valuative knowledge about education.

Analytical inquiry about education is the process of verifying analytical statements about education. Analytical statements about education are declarative sentences about education which are verifiable by the principle of formal reasoning (i.e., definition and necessary inference). The principle of formal reasoning is the principle of verification which is used to establish the coherency relationship between statements about education and the conceivable evidence of linguistic objects (i.e., concepts and propositions) in educational language. Examples of analytical statements about education are:

1. Comparative and international education is a study of foreign educational systems and foreign educational phenomena.
2. The comparative method is a process of inquiry in which similarities and differences of two or more educational systems are stated about.
3. Scientific inquiry in comparative education is the collection and interpretation of empirical data for the verification of generalizations about foreign school systems.

When analytical statements about education are verified by successful analytical inquiry, then the statements constitute analytical knowledge about education.

A synonym which can be used for 'empirical inquiry' is 'scientific inquiry.'

Science, then, can be discussed as the process of verifying empirical statements about observable phenomena. Science of education, therefore, can be discussed as the process of verifying empirical statements about observable phenomena in education.

A synonym which can be used for 'valuative inquiry' and 'analytical inquiry' is 'philosophical inquiry'. Philosophy, then, can be discussed as the process of verifying valuative and analytical statements about conceivable objects (i.e., concepts and propositions) in language. Philosophy of education, therefore, can be discussed as the process of verifying valuative and analytical statements about conceivable objects (i.e., concepts and propositions) in educational language.

Analytical inquiry is the kind of inquiry that is used in this paper to analyze the connotative meanings of the terms 'poverty' and 'learning' as they function in the language of comparative education research. Empirical inquiry and valuative inquiry are not used in this paper.

There are a number of analytical techniques that can be used in the conduct of analytical inquiry, just as there are a number of ways to collect physical evidence in the conduct of empirical inquiry. When the connotative meaning of a term is being analyzed, the analytical techniques which can be used include the techniques of definition, explication, model case, contrary case, borderline case, social context, underlying anxieties, practical results, results in language and substitution.[4]

The technique of definition is the analytical technique in which the referent of a term is assigned to its logical class and characteristics are asserted which distinguish the referent from other objects in that same class.

The technique of explication is the analytical technique in which the terms in the definition of a term are defined.

The technique of model case is the analytical technique in which an example

is stated about that is clearly a denotation of the definition of a term.

The technique of contrary case is the analytical technique in which an example is stated about that is clearly not a denotation of the definition of a term.

The technique of borderline case is the analytical technique in which an example is stated about which is an ambiguous denotation of the definition of a term.

The technique of social context is the analytical technique in which the motivations and circumstances of persons who might use the conception of the term being analyzed are stated about.

The technique of underlying anxiety is the analytical technique in which the underlying anxieties which a person might feel in using the conception of the term being analyzed are stated about.

The technique of practical results is the analytical technique in which the pragmatic outcomes of using the conception of the term being analyzed are stated about.

The technique of results in language is the analytical technique in which the effects on language usage and language meaning from using the conception of the term being analyzed are stated about.

The technique of substitution is the analytical technique in which a term in a statement is replaced by the definition of the term (i.e., the conception of the term) in order to detect any malfunction in language. A malfunction in language is an ambiguity in meaning. An ambiguity in meaning is the simultaneous connotation of two or more definitions by a single term.

The nine analytical techniques which have just been defined are the methods of inquiry which are used in this paper.

Analysis of the Concept of Poverty$_1$

There are at least five conceptions of the term 'poverty'. In order to distinguish among these different conceptions in the analysis, a system of subscripts has been employed (i.e., poverty$_1$, poverty$_2$, poverty$_3$, poverty$_4$, and poverty$_5$). Each subscript indicates a distinct conception of the term 'poverty'.

Definition. One conception of 'poverty' (poverty$_1$) is 'an economic condition of a person in which the person has less income than other persons'.

Explication. The terms in the definition of poverty$_1$ which require definition are 'economic condition', 'income' and 'person'. 'Economic condition' is 'relationship between persons and the production, distribution and consumption of goods and services'. 'Income' is 'quantity of money, goods and services which a person acquires over a period of time'. 'Person' is 'adult male and/or adult female'.

Model case. An example which illustrates the conception of poverty$_1$ is the case in which one group of persons (Group A) in a society accrues an annual income of $500, and another group (Group B) accrues an individual annual income of $50,000. Using the conception of poverty$_1$, it would make sense to say that Group A was living in poverty (poverty$_1$).

Contrary case. On the other hand, if all the persons of a society individually made the same annual income and if that income were $20,000, then it would make sense to say that no person in that society was living in poverty (poverty$_1$).

Borderline case. Suppose that there was a society in which all of the adult members individually made the same annual income and further suppose that the annual income was $90. Using the conception of poverty$_1$, it would be logically correct to say that no one in that society was living in poverty (poverty$_1$) since individual incomes were equal. Yet, it sounds a bit odd to say that an adult with

an annual income of $90 is not living in poverty. The fact that it does seem odd to make such a statement (i.e., a person with a $90 annual income is not poor) indicates that the term 'poverty' has shifted in meaning. That is to say, there is a second conception of 'poverty'.

Analysis of the Conception of $Poverty_2$

Definition. A second conception of 'poverty' ($poverty_2$) is 'an economic condition of a person in which the person has less income than is sufficient for maintenance of life'.

Explication. The terms in the definition of $poverty_2$ which require definition are 'sufficient', 'maintenance' and 'life'. The meaning of 'economic condition', 'income' and 'person' are the same as in the definition of $poverty_1$. 'Sufficient' is 'the quality of being enough in order to obtain some specified outcome'. 'Maintenance' is 'the process in which something is sustained and perpetuated by some other thing'. 'Life' is 'the quality of the human organism which is characterized by metabolic functioning, organic growth, reaction to stimulii, reproduction, consciousness and animation'.

Model case. An example which illustrates the conception of $poverty_2$ is the case in which a person's health is failing and his life is in jeopardy because of insufficient income to obtain the necessary food, shelter, clothing and medical care. The famine and insufficient income which many persons living on the southern border of the Sahara are currently experiencing would be a clear case of poverty ($poverty_2$).

Contrary case. An example which would illustrate the opposite of this conception of 'poverty' ($poverty_2$) is the case in which a person has the requisite income to obtain the minimum number of calories, the minimum quantity of clothing, the minimum degree of shelter and the minimum amount of medical care which would

be sufficient to sustain life. The actual amount of food, clothing, shelter and medical care required for maintenance of life most probably varies with the size and physiological constitution of any particular person, but such questions of quantity are logically possible to answer through empirical inquiry by physiologists, kinesiologists, nutritionists and medical researchers.

Suppose that there was in fact a society in which all of its members had only sufficient (but no excess) income to obtain the minimum necessities for life. That is to say, no member of the society was dying from want of food, clothing, shelter or medical care, but also, no member of the society had income which exceeded the requisite amount to secure the bare necessities. Using the conception of poverty$_2$, it would be logically correct to say that no one in the society was living in poverty (poverty$_2$) since no one was dying from want of the necessities for life. However, it sounds a bit odd to say that a society in which no one has more than the minimum necessities for maintenance of life is a society in which poverty does not exist. The fact that such a statement does seem odd indicates that the term 'poverty' has again shifted in meaning. That is to say, there is a third conception of 'poverty'.

Analysis of the Conception of Poverty$_3$

Definition. A third conception of 'poverty' (poverty$_3$) is 'an economic condition of a person in which the person has income that is insufficient to qualify him for membership in the middle class'.

Explication. The meaning of 'economic condition', 'income' and 'person' are the same as in the definition of poverty$_1$. The terms in the definition which require definition are 'insufficient', 'qualify', 'membership' and 'middle class'. 'Insufficient' is 'the quality of not being enough to obtain some specified outcome'. 'Qualify' is 'the process in which something obtains some desired and/or

desirable condition or outcome'. 'Membership' is 'condition of something in which that something shares one or more common characteristics with a group of things'. 'Middle class' is 'a group of persons in a society which has an intermediate rank and an intermediate income'.

The minimum income which qualifies any given individual for the middle class is relative to a particular society and a particular time. However, it is logically possible to empirically establish, within some range of probability, the actual requisite amount of income for membership in the middle class of any given society at a given time.

It is the case that the conception of $poverty_3$ is the concept which has been followed in the United States by agencies of the federal government in setting national standards for execution of social and economic policies. Through empirical inquiry the U.S. Department of Labor and the U.S. Department of Health, Education and Welfare have established a specific dollar amount (currently $4,350 for a family of four in a non-farm area) as being a poverty-level annual income in America. This amount of annual income ($4,350) clearly does not qualify a person for membership in the American middle class. The dollar figure of $4,350 is the current denotation of poverty ($poverty_3$) in America, but it is not the definition (connotation) of 'poverty' ($poverty_3$). The definition (connotation) of '$poverty_3$' is 'income which is insufficient to qualify a person for membership in the middle class'.

Model case. Suppose that there was a society in which a minimum annual income for a family of four of $24,000 was required to qualify for membership in the middle class. Further suppose that there was a family of four in this society that had an annual income of $12,000. Since the family with the income of $12,000 had an income that was clearly insufficient for inclusion in the middle class of their society, it would be logically correct, using the conception of $poverty_3$,

to say that this family was living in poverty ($poverty_3$).

Suppose now, that when the head of the family with the $12,000 annual income is asked whether he is living in poverty, he replies that no, he is not. Further suppose that when asked to explain his answer, the head of the family says that poverty is a state of mind and that he does not feel poor. Statements of the order, "You may think me poor, but I don't feel poor," indicate that there is yet another conception of poverty ($poverty_4$).

Analysis of the Conception of $Poverty_4$

Definition. A fourth conception of 'poverty' ($poverty_4$) is 'an economic condition of a person in which the person has income that is insufficient to make the person feel content'.

Explication. The meaning of 'economic condition', 'income', 'person' and 'insufficient' have been explicated in the analysis of $poverty_1$, $poverty_2$, and $poverty_3$. The terms in the definition which require definition are 'make', 'feel' and 'content'. 'Make' is 'the action of something which compels something else to react in some way'. 'Feel' is 'the act of a person detecting his own emotions'. 'Content' is 'an emotional state of feeling satisfaction'.

Model case. An example which is a clear denotation of the conception of $poverty_4$ is a person who habitually complains that he never has enough income and who constantly seeks ways to increase his income. His feeling of discontent with his income compels him to strive for more income. When people tell him that he makes enough, he replies that they might believe so, but he personally feels poor. Using the conception of $poverty_4$, the man is logically correct in stating that in middle age he feels more stricken with poverty on a $20,000 annual income than he did in his youth on a $3,000 annual income. Since poverty ($poverty_4$) is a function of the man's emotional state, his statements about being poverty stricken ($poverty_4$) will correlate with the fluctuations of his desire for goods and

services.

Contrary case. An example which is clearly not a denotation of the conception of $poverty_4$ is a person who genuinely feels content with his income. Suppose that there was a man who was head of a household of four and who had an income of $4,000 in contemporary American society. If he felt content with his $4,000, then he would not be living in poverty ($poverty_4$). If he did not feel content with his income, then he would be living in poverty ($poverty_4$).

Sometimes it is the case that a person (Person A) feels content with his income, but an observer (Person B) feels discontent with Person A's income and judges that Person A is living in poverty. Even though Person A insists that he is not living in poverty ($poverty_4$), Person B insists that Person A is living in poverty. Such a situation indicates that Person B is using another conception of poverty ($poverty_5$).

Analysis of the Conception of $Poverty_5$

Definition. A fifth conception of 'poverty' ($poverty_5$) is 'an economic condition of a person in which the person has less income than is sufficient to make persons other than himself feel content with his income'.

Explication. The terms in the definition which have already been defined in the analysis of $poverty_1$, $poverty_2$, $poverty_3$ and $poverty_4$ are 'economic condition', 'person', 'income', 'sufficient', 'make', 'feel' and 'content'. The persons who might feel discontent with the low level of income of another person could at times include relatives, social workers, politicians, members of the middle class, members of the upper class, wealthier foreign visitors, egalitarian minded social reformers.

Model case. The following situation is an example which illustrates the conception of $poverty_5$. Suppose that a man in contemporary American society visits a friend in Lusaka, Zambia. At the friend's house in Lusaka, there is a servant

who works barefoot, earns in cash and goods some $160 per month and lives in a two room dwelling with his wife and four children. The American feels discontent with the fact that the servant has no greater income, and thus it makes sense for the American to say that the servant is living in poverty (poverty$_5$).

Contrary case. Suppose that the American reports his feeling to his friend, who is the employer of the servant. The friend replies that his employee, the servant, is making triple the annual income that he (the servant) had made formerly by farming; the servant's house is stone (rather than the more common mud and wattle) and is free of rats; the servant's water supply is constant and pure (instead of the usual intermittent and polluted supply); the servant has enough cash for his children's school fees, for taxes and other important expenses. All in all, the servant is economically far better off than he might otherwise be in some other sector of the economy, claims the employer. The employer reports that he (the employer) feels content with the servant's income, and the servant is certainly not living in poverty (poverty$_5$).

Like the concept of poverty$_4$, the concept of poverty$_5$ is a function of a person's emotional state, and statements made by the person about poverty (poverty$_5$) will correlate with the fluctuations of the person's desire for other persons to have goods and services.

Concepts Related to the Concept of Poverty

Thus far in this analysis, it has been found that there are at least five conceptions of poverty:

(1) Poverty$_1$ (an economic condition of a person in which the person has less income than other persons);

(2) Poverty$_2$ (an economic condition of a person in which the person has less income than is sufficient for maintenance of life);

(3) Poverty$_3$ (an economic condition of a person in which the person has less income than is sufficient to qualify him for the middle class);

(4) Poverty$_4$ (an economic condition of a person in which the person has less income than is sufficient to make him feel content);

(5) Poverty$_5$ (an economic condition of a person in which the person has less income than is sufficient to make persons other than himself feel content).

The concept of poverty is related to other concepts. One of the concepts to which the concept of poverty is related is the concept of scarcity. 'Scarcity' is 'a condition in which something is lacking'. The concept of scarcity is related to the concept of poverty in that the concept of poverty also implies the lack of something. However, the concept of scarcity is the broader of the two concepts. The concept of poverty differs from the concept of scarcity in that the concept of poverty implies (1) that the something which is lacking is income and (2) that the lack of income is relative to some standard. In the concept of poverty$_1$, the standard is sameness. In the concept of poverty$_2$, the standard is maintenance of life. In the concept of poverty$_3$, the standard is income of the middle class. In the concept of poverty$_4$, the standard is an emotional condition (i.e., a feeling of contentment). In the concept of poverty$_5$, the standard is also an emotional condition.

Synonyms for 'poverty$_1$' are 'economic inequality', 'economic disparity', and 'economic inequity'. Synonyms for 'poverty$_2$' are 'destitution', 'starvation' and 'mendicancy'. A synonym for 'poverty$_3$' is 'lower class membership'. A synonym for 'poverty$_4$' is 'economic self discontent'. A synonym for 'poverty$_5$' is 'economic discontent for others'.

Analysis of the Concept of Learning$_1$

Definition. There are at least four conceptions of the term 'learning'. One conception of the term 'learning' (learning$_1$) is 'the process by which a person acquires knowledge'.

Explication. The terms in the definition of learning$_1$ which require definition are 'process', 'person', 'acquire' and 'knowledge'. 'Process' is 'a sequence of actions and/or events'. 'Person' is 'human being which observes by way of his five sense organs, perceives by way of his emotions and conceives by way of his language'. 'Acquires' is 'action by which something is gained by something'.

'Knowledge' has at least two conceptions. One conception of 'knowledge' (knowledge$_1$) is 'statements which are verified by establishment of a logical relationahip between evidence and declarative sentences'. 'Verified statements' are 'true statements'. If knowledge$_1$ is 'verified statements', then knowledge$_1$ is 'true statements'.

A second conception of 'knowledge' (knowledge$_2$) is 'performance of a person which is effective'. 'Performance' is 'actions which are observable by one of the five sense organs'. 'Effective' is 'the quality of something in which the something is efficacious in obtaining some desired and/or desirable outcome'. Synonyms for 'performance' are 'behavior', 'gestures' and 'actions'. A synonym for 'effective performance' is 'skill'. If a synonym for 'knowledge$_2$' is 'effective performance', and if a synonym for 'effective performance' is 'skill', then a synonym for 'knowledge$_2$' is 'skill'.

The distinction between knowledge$_1$ and knowledge$_2$ can be illustrated by the example of ice skating. Knowledge$_1$ about effective ice skating is true statements about effective ice skating. True statements about effective ice skating can be discussed as the principles of effective ice skating. If knowledge$_1$ is

true statements, and if true statements are principles, then principles constitute knowledge$_1$.

Knowledge$_2$ about effective ice skating is the successful performance of ice skating. When the ice skating performance of a person (Person A) corresponds with the principles of effective ice skating (i.e., knowledge$_1$ about ice skating), then it is logically correct to say that Person A has knowledge$_2$ of ice skating. When a person (Person A) makes true statements about effective ice skating (i.e., states knowledge$_1$ about ice skating), then it is logically correct to say that Person A has knowledge$_1$ about ice skating. If a person (Person A) can perform ice skating effectively, but can not make true statements about effective ice skating, then it is correct to say that Person A has knowledge$_2$, but not knowledge$_1$, about ice skating. If a person (Person A) can not perform ice skating effectively, but can make true statements about effective ice skating, then it is correct to say that Person A has knowledge$_1$, but not knowledge$_2$, about ice skating.

The conception of 'learning' (learning$_1$) as 'acquisition of knowledge' necessarily implies the acquisition of both knowledge$_1$ and knowledge$_2$.

Model case. The conception of 'learning' (learning$_1$) as 'acquiring knowledge' is intended in statements such as:

1. John is learning mathematics, geography and wood crafts in school.
2. Much of our learning takes place in settings outside of the schools.
3. Kumasi is learning the carpenter's trade through an apprenticeship program in Tabora.

The concept of learning$_1$ can be illustrated with an example. Suppose that a mother shows and tells her child how to tie his shoe laces. After listening, observing and practicing tying and stating about tying, the child successfully ties his shoe laces and can state some principles of effective shoe lace tying. In this case, it makes sense to say that learning$_1$ has taken place. The child

has in fact acquired the knowledge$_1$ and knowledge$_2$ of tying shoe laces.

Contrary case. A contrary case of learning would be if the child could tie his shoe laces after being told how to do it, shown how to do it and given practice in tying and stating about tying but could not state any principles of effective shoe lace tying.

Borderline case. Suppose that the child's father asks the child to explain (i.e., state about) how to tie shoe laces, but, alas, the child can not effectively give a verbal explanation (i.e., the child can not state very many principles of effective shoe lace tying). In such a case, the child has not acquired very much knowledge$_1$ of (i.e., true statements about) tying shoe laces. However, in such a case, it could still be claimed that learning (learning$_1$) had taken place as long as the child could tie his shoe laces, even though he could not make many true statements about how to effectively tie shoe laces. It would be logically correct to say that learning (learning$_1$) had taken place because the concept of learning$_1$ implies acquisition of knowledge$_1$ and knowledge$_2$ and the child had acquired some of both.

Suppose now that the contrary case were true. That is, suppose that the child was told and was shown how to tie shoe laces and suppose that the child could then tell how to tie shoe laces, but was not able to effectively tie shoe laces. It would be odd to say that the child had acquired knowledge of tying shoe laces, and of course the problem is with the concept of 'knowledge'. The meaning of 'knowledge' is shifting from the concept of knowledge$_1$ to the concept of knowledge$_2$. The problem of ambiguity with the term 'knowledge' causes ambiguity in the conception of learning$_1$. The concept of learning$_1$ can also shift in meaning from 'acquisition of knowledge$_1$' to 'acquisition of knowledge$_2$'. This shift in meaning becomes apparent in a statement such as:

> If the boy can state principles of effective shoe lace tying, but is not able to tie his shoes, then learning has taken place, but not "real" learning.

The expression, 'real learning', indicates a shift in meaning, i.e., the expression indicates a second conception of 'learning' (learning$_2$).

Analysis of the Concept of Learning$_2$

Definition. A second conception of 'learning' (learning$_2$) is 'the process by which a person acquires knowledge$_1$'.

Explication. The explication of the terms 'process', 'person', 'acquires' and 'knowledge$_1$' has been given in the explication of the definition of learning$_1$.

Model case. Suppose that a psychologist explains to his neighbor Maslow's theory of a hierarchy of human needs and suppose that the neighbor conceives the meaning of the statements in the explanation. Suppose further that whenever asked about Maslow's theory of a hierarchy of human needs, the neighbor makes true statements about the theory. In such a case, it makes sense to say that learning (learning$_2$) has taken place. The neighbor has in fact acquired knowledge$_1$ of the theory.

Contrary case. If, when asked about the theory, the neighbor could never make true statements about Maslow's hierarchy of human needs, then it would make sense to say that learning (learning$_2$) had not taken place. The neighbor had not acquired knowledge$_1$ of the theory.

Analysis of the Concept of Learning$_3$

Definition. A third conception of 'learning' (learning$_3$) is 'the process by which a person acquires knowledge$_2$'.

Explication. The explication of the terms 'process', 'person', 'acquires' and 'knowledge$_2$' has been given in the explication of the definition of learning$_2$.

Model case. The conception of learning$_3$ is intended in statements such as:

1. Ali is learning cursive handwriting.
2. Fatima is learning tennis.
3. Michael is learning welding.

The concept of learning$_3$ implies that a skill (i.e., knowledge$_2$) is being learned. An example which is a clear denotation of the concept of learning$_3$ is the following situation. An apprentice observes his supervisor demonstrate how to do a bead weld at the juncture of two steel plates, and then, the apprentice himself does a good quality bead weld. In this example, it makes sense to say that learning (learning$_3$) has taken place because the apprentice has in fact acquired the knowledge (knowledge$_2$) of bead welding.

Contrary case. If, after the demonstration, the apprentice could state about effective techniques to follow in forming a bead weld, but in fact could not perform the bead weld, then it would be logically correct to say that learning (learning$_3$) had not taken place, even though learning (learning$_2$) had taken place.

Analysis of the Concept of Learning$_4$

Definition. There is a fourth conception of 'learning'. The fourth conception of 'learning' (learning$_4$) is 'the process in which a person attends school and acquires degrees and certificates'.

Explication. The terms in the definition of learning$_4$ which require definition are 'attends', 'school', 'degrees' and 'certificates'. 'Attends' is 'the action of a person in which the person places himself in a particular setting at a particular time'. 'School' is 'a place in which persons are assembled for the purpose of someone deliberately teaching and someone intentionally acquiring knowledge about something'. 'Intentionally teaching' is 'the process in which someone deliberately acts and speaks in ways which are meant to bring about acquisition of knowledge by someone'. 'Intentionally acquiring knowledge' is 'the action of a person in which the person deliberately gains true statements and/or effective performances'. 'Degrees' are 'documents on which statements are made that testify to membership in a group and/or work or attendance completed'. 'Certificates' are 'documents on which statements are made that testify that

specified requirements have been completed and/or a specified amount of work has been completed'.

Synonyms for the concept of 'learning$_4$' are 'schooling', 'school attendance', 'educational attainment' and 'educational achievement'.

The Four Conceptions of Learning

Thus far in the analysis of 'learning', it has been found that there are at least four conceptions of learning:

(1) Learning$_1$ (the process by which a person acquires verified statements and skills);

(2) Learning$_2$ (the process by which a person acquires verified statements;

(3) Learning$_3$ (the process by which a person acquires skills);

(4) Learning$_4$ (the process of attending school and acquiring degrees and certificates).

A synonym for 'learning$_1$' is 'concept formation and skills development'. A synonym for 'learning$_2$' is 'conception formation'. A synonym for 'learning$_3$' is 'skills development'. Synonyms for 'learning$_4$' are 'schooling', 'school attendance', 'educational attainment' and 'educational achievement'.

PRACTICAL RESULTS FOR COMPARATIVE EDUCATION RESEARCH

The different conceptions of 'poverty' and 'learning' have practical results for research which is conducted by comparative education. Although none of the conceptions of 'learning' are necessarily related to any of the conceptions of 'poverty' which have been defined and explicated in this paper, a logical relationship can be established if two value assumptions are made and one empirical assumption is made. The first value assumption is the assumption that poverty is bad. The second value assumption is the assumption that poverty ought to be extirpated. The empirical assumption is the assumption that learning can extirpate poverty. Given these two value assumptions and the one empirical

assumption, the empirical question can logically be asked, "How can learning contribute to the elimination of poverty?"

Suppose that a researcher does make the value assumptions that poverty is bad and poverty ought to be extirpated and does make the empirical assumption that learning can extirpate poverty. Further suppose that the researcher chooses to conduct a comparative cross-cultural study to answer the empirical problem, "How can learning contribute to the elimination of poverty?" Given all of the requisite assumptions so that the question can logically be asked, the question is still ambiguous. The ambiguity and the possible meanings of the question can be made apparent by the technique of substitution.

Substitution No. 1: Learning$_1$ and Poverty$_1$. If the conceptions of learning$_1$ and poverty$_1$ are intended, then the question,

> How can learning contribute to the elimination of poverty?

by the technique of substitution can be changed to the question,

> How can [the acquisition of verified statements and skills] contribute to the elimination of [an economic condition in which some persons have less income than other persons]?

Substitution No. 2: Learning$_1$ and Poverty$_2$. If the conceptions of learning$_1$ and poverty$_2$ are intended, then the question,

> How can learning contribute to the elimination of poverty?

by the technique of substitution can be changed to the question,

> How can [the acquisition of verified statements and skills] contribute to the elimination of [an economic condition in which persons have less income than is sufficient for maintenance of life]?

Substitution No. 3: Learning$_1$ and Poverty$_3$. If the conceptions of learning$_1$ and poverty$_3$ are intended, then the question,

> How can learning contribute to the elimination of poverty?

by the technique of substitution can be changed to the question,

> How can [the acquisition of verified statements and skills] contribute to the elimination of [an economic condition in which persons have less income than is sufficient for membership in the middle class]?

Substitution No. 4: Learning$_1$ and Poverty$_4$. If the conceptions of learning$_1$ and poverty$_4$ are intended, then the question,

> How can learning contribute to the elimination of poverty?

by the technique of substitution can be changed to the question,

> How can [the acquisition of verified statements and skills] contribute to the elimination of [an economic condition in which persons have less income than is sufficient to make them feel content]?

Substitution No. 5: Learning$_1$ and Poverty$_5$. If the conceptions of learning$_1$ and poverty$_5$ are intended, then the question,

> How can learning contribute to the elimination of poverty?

by the technique of substitution can be changed to the question,

> How can [acquisition of verified statements and skills] contribute to the elimination of [an economic condition in which some persons have less income than is sufficient to make persons other than themselves feel content]?

Substitution No. 6: Learning$_2$ and Poverty$_1$. If the conceptions of learning$_2$ and poverty$_1$ are intended, then the question,

> How can learning contribute to the elimination of poverty?

by the technique of substitution can be changed to the question,

> How can [the acquisition of verified statements] contribute to the elimination of [an economic condition in which some persons have less income than other persons]?

Substitution No. 7: Learning$_2$ and Poverty$_2$. If the conceptions of learning$_2$ and poverty$_2$ are intended, then the question,

> How can learning contribute to the elimination of poverty?

by the technique of substitution can be changed to the question,

> How can [the acquisition of verified statements] contribute to the elimination of [an economic condition in which persons have less income than is sufficient for maintenance of life]?

Substitution No. 8: Learning$_2$ and Poverty$_3$. If the conceptions of learning$_2$ and poverty$_3$ are intended, then the question,

> How can learning contribute to the elimination of poverty?

by the technique of substitution can be changed to the question,

> How can [the acquisition of verified statements] contribute to the elimination of [an economic condition in which persons have less income than is sufficient for membership in the middle class]?

Substitution No. 9: Learning$_2$ and Poverty$_4$. If the conceptions of learning$_2$ and poverty$_4$ are intended, then the question,

> How can learning contribute to the elimination of poverty?

by the technique of substitution can be changed to the question,

> How can [the acquisition of verified statements] contribute to the elimination of [an economic condition in which persons have less income than is sufficient to make them feel content]?

Substitution No. 10: Learning$_2$ and Poverty$_5$. If the conceptions of learning$_2$ and poverty$_5$ are intended, then the question,

> How can learning contribute to the elimination of poverty?

by the technique of substitution can be changed to the question,

> How can [the acquisition of verified statements] contribute to the elimination of [an economic condition in which persons have less income than is sufficient to make persons other than themselves feel content]?

Substitution No. 11: Learning$_3$ and Poverty$_1$. If the conceptions of learning$_3$ and poverty$_1$ are intended, then the question,

> How can learning contribute to the elimination of poverty?

by the technique of substitution can be changed to the question,

> How can [the acquisition of skills] contribute to the elimination of [an economic condition in which some persons have less income than other persons]?

Substitution No. 12: Learning$_3$ and Poverty$_2$. If the conceptions of learning$_3$ and poverty$_2$ are intended, then the question,

How can learning contribute to the elimination of poverty?

by the technique of substitution can be changed to the question,

> How can [the acquisition of skills] contribute to the elimination of [an economic condition in which persons have less income than is sufficient for maintenance of life]?

Substitution No. 13: Learning$_3$ and Poverty$_3$. If the conceptions of learning$_3$ and poverty$_3$ are intended, then the question,

> How can learning contribute to the elimination of poverty?

by the technique of substitution can be changed to the question,

> How can [the acquisition of skills] contribute to the elimination of [an economic condition in which persons have less income than is sufficient for membership in the middle class]?

Substitution No. 14: Learning$_3$ and Poverty$_4$. If the conceptions of learning$_3$ and poverty$_4$ are intended, then the question,

> How can learning contribute to the elimination of poverty?

by the technique of substitution can be changed to the question,

> How can [the acquisition of skills] contribute to the elimination of [an economic condition in which persons have less income than is sufficient to make them feel content]?

Substitution No. 15: Learning$_3$ and Poverty$_5$. If the conceptions of learning$_3$ and poverty$_5$ are intended, then the question,

> How can learning contribute to the elimination of poverty?

by the technique of substitution can be changed to the question,

> How can [the acquisition of skills] contribute to the elimination of [an economic condition in which persons have less income than is sufficient to make persons other than themselves feel content]?

Substitution No. 16: Learning$_4$ and Poverty$_1$. If the conceptions of learning$_4$ and poverty$_1$ are intended, then the question,

> How can learning contribute to the elimination of poverty?

by the technique of substitution can be changed to the question,

> How can [attendance at school] contribute to the elimination of [an economic condition in which some persons have less income than other persons]?

Substitution No. 17: Learning$_4$ and Poverty$_2$. If the conceptions of learning$_4$ and poverty$_2$ are intended, then the question,

> How can learning contribute to the elimination of poverty?

by the technique of substitution can be changed to the question,

> How can [attendance at school] contribute to the elimination of [an economic condition in which persons have less income than is sufficient for maitenance of life]?

Substitution No. 18: Learning$_4$ and Poverty$_3$. If the conceptions of learning$_4$ and poverty$_3$ are intended, then the question,

> How can learning contribute to the elimination of poverty?

by the technique of substitution can be changed to the question,

> How can [attendance at school] contribute to the elimination of [an economic condition in which persons have less income than is sufficient for membership in the middle class]?

Substitution No. 19: Learning$_4$ and Poverty$_4$. If the conceptions of learning$_4$ and poverty$_4$ are intended, then the question,

> How can learning contribute to the elimination of poverty?

by the technique of substitution can be changed to the question,

> How can [attendance at school] contribute to the elimination of [an economic condition in which persons have less income than is sufficient to make them feel content]?

Substitution No. 20: Learning$_4$ and Poverty$_5$. If the conceptions of learning$_4$ and poverty$_5$ are intended, then the question,

> How can learning contribute to the elimination of poverty?

by the technique of substitution can be changed to the question,

> How can [attendance at school] contribute to the elimination of [an economic condition in which persons have less income than is sufficient to make persons other than themselves feel content]?

Practical Results of Substitution

Consider Substitution No. 3 in which the conception of learning$_1$ and poverty$_3$ were substituted for the terms 'learning' and 'poverty' in the

question, "How can learning contribute to the elimination of poverty?" When the substitution is make, the question becomes, "How can [acquisition of verified statements and skills] contribute to the elimination of [an economic condition in which persons have less income than is sufficient for membership in the middle class]?"

Suppose that a researcher had intended the conceptions of learning$_1$ and poverty$_3$ when he first asked the question. The analytical techniques of definition, explication and substitution would reveal to the researcher that he ought to change his question. Analysis would show that learning$_1$ could not contribute to the elimination of poverty$_3$. That is, the act of acquiring verified statements and skills has no logical connection with the elimination of a social category called lower class. What might eliminate the economic condition of persons having less than middle class income would be (1) adherence by some persons to some particular verified statements (i.e., human behavior in accordance with some kind of knowledge$_1$) and (2) effective performance of some skills. With these insights gained from analytical inquiry, the questions which could be researched and answered, using the conceptions of learning$_1$ and poverty$_3$, would be:

(1) What verified statements, if adhered to, could contribute to the elimination of poverty$_3$? (an empirical question)

(2) What skills if effectively practiced could contribute to the elimination of poverty$_3$? (an empirical question)

(3) Among the verified statements which if adhered to could contribute to the elimination of poverty$_3$ ought ethically be adhered to? (a valuative question)

(4) Among the skills which if effectively practiced could contribute to the elimination of poverty$_3$ ought ethically be adhered to? (a valuative question)

(5) How can persons be caused to adhere to the verified statements which ethically ought to be adhered to in elimination of poverty$_3$? (an empirical question)

(6) How can persons be caused to effectively practice the skills which ethically ought to be practiced to eliminate poverty$_3$? (an empirical question)

(7) How can persons ethically be caused to adhere to the verified statements which ought ethically be adhered to in eliminating $poverty_3$? (an empirical question)

(8) How can persons ethically be caused to effectively practice the skills which ought ethically be practiced to eliminate $poverty_3$? (an empirical question)

If the preliminary analytical work is not done in asking and answering questions about 'poverty' and 'learning', some of the pragmatic results will be:

(1) researchers asking and answering questions which they do not intend;

(2) researchers failing to correctly and effectively answer the questions which they ask;

(3) researchers confusing inquiry about education with inquiry about society and inquiry about politics;

(4) researchers confusing analytical inquiry and valuative inquiry with empirical inquiry;

(5) researchers giving up in confusion, frustration and despair with the mistaken conclusion that there are no questions that are answerable.

In order to dissolve the problem of ambiguity in their language, comparative education researchers, and researchers in general, must learn to distinguish among analytical, empirical and valuative inquiry. That is, they must attend to the analyticity of their language and adhere to the rules of inquiry which are necessarily implied by the type of inquiry that is intended by the researchers.

FOOTNOTES

1. The techniques of definition, explication and substitution are explained in the section of this paper under the paragraph sideheading, Methods of Analytical Inquiry. Illustration is a general term for the application of several analytical techniques, including model case, contrary case, borderline case, social context, underlying anxiety, practical results and results in language. These techniques are also explained in this paper under the paragraph heading, Methods of Analytical Inquiry.

2. The definition of 'education' in this paper follows Elizabeth Steiner Maccia. She introduced her definition in "Logic of Education and of Educatology: Dimensions of Philosophy of Education," Proceedings of the Philosophy of Education Society, 1964. In this work she also introduces the term 'educatology', which she has since changed to 'educology'. We have extended her definition of 'education' to include intentionality, method and style.

3. An excellent reference on the logic of valuative inquiry (i.e., valuative research) is Paul W. Taylor's Normative Discourse, New York: Prentice-Hall, Incorporated, Englewood Cliffs, 1961. In this book Taylor makes the logical distinction between empirical inquiry (research) and valuative inquiry (research) and sets out the logic of valuative inquiry (research).

4. These analytical techniques for conducting analytical inquiry (research) are discussed by John Wilson in Thinking with Concepts, (Cambridge University Press, 1963), pp. 16-48. This paper extends Wilson's discussion by defining the analytical techniques in accordance with the rules of definition (i.e., assignment of the referent of a term to its logical class and assertion of distinctive characteristics of the referent).